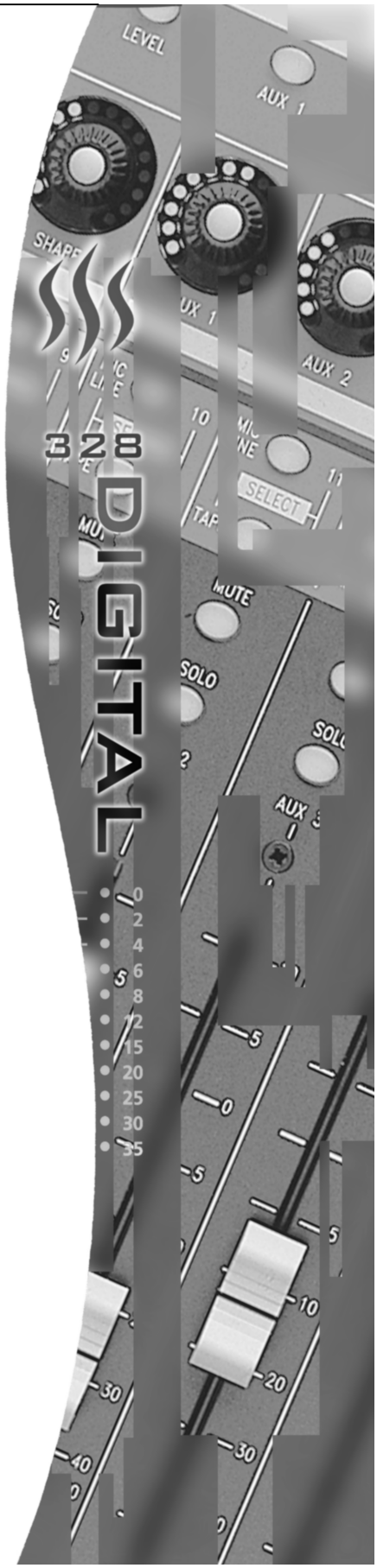
SPIRIT
BY SOUNDCRAFT

digital

three two eight

V 2.0



DAT Recorder Setup Guide

Revised: 04-12-00

Digital 328 v2 and DAT Recorder Setup Guide

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DAT Recorders Without BNC Wordclock Input

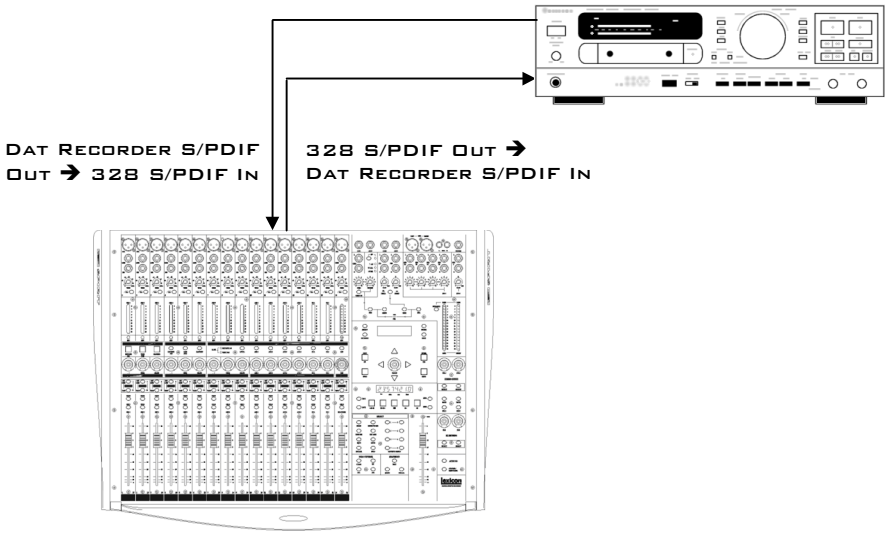
1 Connecting The System

Audio Connections

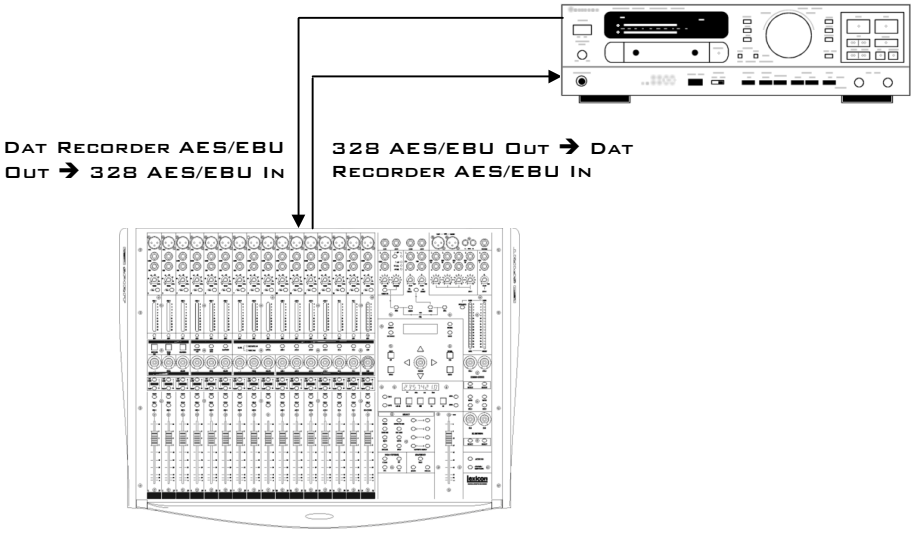
In order to connect the DAT recorder digitally to the 328, it must have either a coaxial S/PDIF Input and Output or AES/EBU input and output.

NOTE	**The Auxiliary Optical Output on the 328 transmits a signal in ADAT format, not optical S/PDIF format.**

If the DAT recorder has S/PDIF I/O, the system should be configured thus:



If the DAT recorder has AES/EBU I/O, the system should be configured thus:



2 Digital 328 Setup

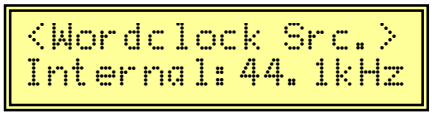
Wordclock

DAT recorders without a wordclock input will automatically slave to the S/PDIF or AES/EBU digital input when set to record digitally. Consequently, the 328 must be configured as a wordclock master when recording to DAT. However, when playing back from the DAT recorder, the 328 must slave either to the S/PDIF or AES/EBU input, depending on which is connected. As a result, two wordclock settings must be switched between on the 328 when using a DAT recorder – one for recording to DAT and one for playback.

NOTE	**As the 328 will be changed between two different clock settings for playback from and recording to DAT, it is advisable not to slave the 328 to another, external unit. Subsequently changing the 328 clock source to External: S/PDIF or External: AES/EBU for DAT playback would result in clock issues.**

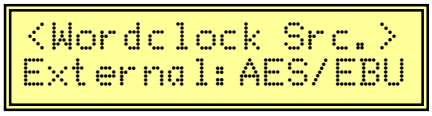
RECORDING TO DAT:

Press **<MENU>**, and use the PARAM encoder to scroll down until 'Clock Source Sel' is the highlighted menu. Press **<ENTER>** and set the 328 to run on its internal clock at the sample rate at which you wish to record:

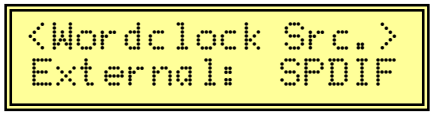


PLAYING BACK FROM DAT:

Press **<MENU>**, and use the PARAM encoder to scroll down until 'Clock Source Sel' is the highlighted menu. Press **<ENTER>** and set the 328 to slave to the clock at the AES/EBU or S/PDIF input:



or



S/PDIF Input And Output Configuration

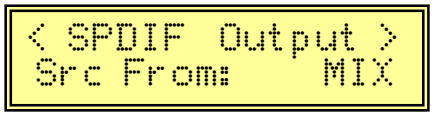
S/PDIF Input:

Press **<MENU>**, and use the PARAM encoder to scroll down until 'SPDIF I/P Setup' is the highlighted menu. Press **<ENTER>** and route the S/PDIF input as required, from a choice of stereo inputs 1 and 2, FX returns 1 and 2 or as a dedicated 2 Track input. The SP/DIF input can also be routed to 'NOWHERE', which is the default setting, in which case the signal is muted.

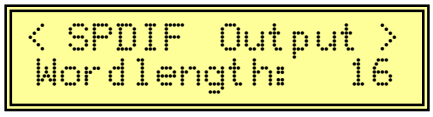
NOTE	**Assigning the S/PDIF input will override any analogue signal present at the selected input. The S/PDIF and AES/EBU inputs cannot be routed to the same input simultaneously.**

S/PDIF Output:

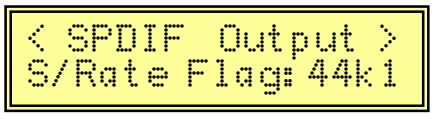
Press **<MENU>**, and use the PARAM encoder to scroll down until 'SPDIF O/P Setup' is the highlighted menu. Press **<ENTER>** and route the S/PDIF output as required, from a choice of the mix bus, aux outputs 1/2 or 3/4, or FX sends 1/2.

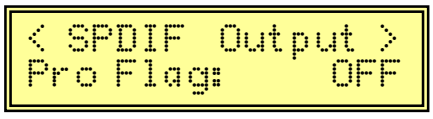


To set the wordlength of the S/PDIF output, press the down cursor from the above menu page. The wordlength options are 16, 20 or 24 bit. Note that 16 and 20 bit settings are dithered and 24 bit is undithered.



To set the status bits within the S/PDIF output stream * , press the down cursor. By default the S/PDIF output status bits setting of 'AUTO' sets the sample rate flag to 44.1kHz and the pro flag to off. To set these manually, you should use the PARAM encoder to set the status bits to MAN. Press the down cursor again to set the sample rate flag and again to set the pro flag on or off.



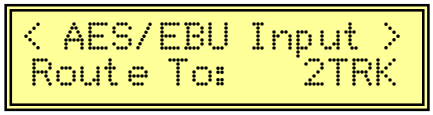


NOTE	*** Individual DAT recorder models may require different settings. Consult the DAT Recorder Setup section of this setup guide and documentation specific to the DAT recorder model.**

AES/EBU Input And Output Configuration

AES/EBU Input:

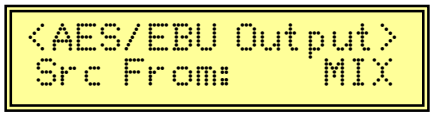
Press **<MENU>**, and use the PARAM encoder to scroll down until 'AES/EBU I/P Set.' is the highlighted menu. Press **<ENTER>** and route the AES/EBU input as required, from a choice of stereo inputs 1 and 2, FX returns 1 and 2 or as a dedicated 2 Track input. The AES/EBU input can also be routed to 'NOWHERE', which is the default setting, in which case the signal is muted.



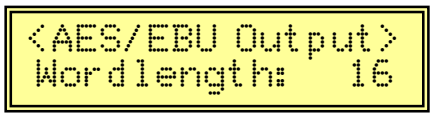
NOTE	**Assigning the S/PDIF input will override any analogue signal present at the selected input. The S/PDIF and AES/EBU inputs cannot be routed**

AES/EBU Output:

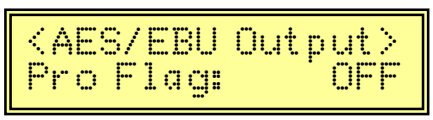
Press **<MENU>**, and use the PARAM encoder to scroll down until 'AES/EBU O/P Set.' is the highlighted menu. Press **<ENTER>** and route the AES/EBU output as required, from a choice of the mix bus, aux outputs 1/2 or 3/4, or FX sends 1/2.



To set the wordlength of the AES/EBU output, press the down cursor from the above menu page. The wordlength options are 16, 20 or 24 bit. Note that 16 and 20 bit settings are dithered and 24 bit is undithered.



To set the status bits within the AES/EBU output stream * , press the down cursor. By default the AES/EBU output status bits setting of 'AUTO' sets the sample rate flag to 48kHz and the pro flag to on. To set these manually, you should use the PARAM encoder to set the status bits to MAN. Press the down cursor again to set the sample rate flag and again to set the pro flag on or off.



NOTE	*** Individual DAT recorder models may require different settings. Consult the DAT Recorder Setup section of this setup guide and documentation specific to the DAT recorder model.**

DAT Recorder Setup 3

Generally, the DAT recorder will have to be set up to record from the digital AES/EBU or S/PDIF input rather than the analogue input. Consult your DAT recorder manual for precise details of how this should be done.

No clock settings should need to be made to the DAT recorder as, as outlined on page 3, it should slave automatically to the incoming signal when recording and on playback act only as a clock master.

Notes on individual DAT recorder operation with the 328 are included in section 4 of this guide – again the DAT recorder user manual should be consulted for further information.

4 Notes on Specific DAT

Fostex D5

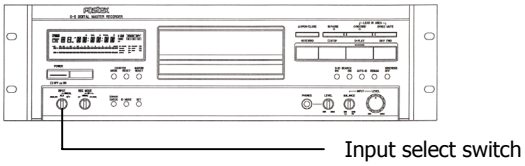
The Fostex D5 detects clock frequency from the 328 AES/EBU output sample rate flag setting and not the 328 internal clock frequency (see page 5). Consequently the sample rate flag setting should be set to the same as the 328 internal clock, or if the 328 is slaving to another external source, to the sample rate of that source.

When slaving to the Fostex D5 output, a change of sample rate on the DAT tape will cause the 328 to lose wordclock. Enter the 328 Clock Source Select menu to set the 328 back to slave to the AES/EBU input.

When slaving to the Fostex D5 output, changing the DAT tape to a tape with a different sample rate from the previous tape will cause the 328 to lose wordclock. Enter the 328 Clock Source Select menu to set the 328 back to slave to the AES/EBU input.

Pro Flag may be set to on or off in the 328 AES/EBU or S/PDIF output setup menus.

The D5 input should be set to Digital XLR with the input select switch.



Tascam DA-302

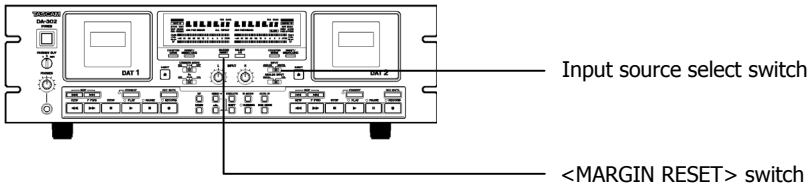
The DA-302 detects clock frequency from the 328 AES/EBU output sample rate flag setting and not the 328 internal clock frequency (see page 5). Consequently the sample rate flag setting should be set to the same as the 328 internal clock, or if the 328 is slaving to another external source, to the sample rate of that source.

Pro Flag may be set to on or off in the 328 AES/EBU or S/PDIF output setup menus.

A momentary click may be heard when adjusting 328 S/PDIF output status bits until the DA-302 syncs again and MARGIN may register on the DA-302 display – use the <MARGIN RESET> switch to clear (DA-302 manual p 9/10).

Adjusting status bit settings or the 328 sample rate while recording or in record ready mode will result in momentary clicks in the audio stream and a temporary dropout on the DA-302 input, indicated on the DA-302 input meters.

'Digital' must be selected as input source on input selection switch.



Tascam DA-20 MkII

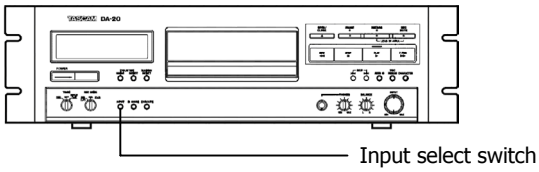
The Tascam DA-20 MkII detects clock frequency from the 328 S/PDIF output sample rate flag setting and not the 328 internal clock frequency (see page 5). Consequently the sample rate flag setting should be set to the same as the 328 internal clock, or if the 328 is slaving to another external source, to the sample rate of that source.

When slaving to the Tascam DA-20 output, a change of sample rate on the DAT tape will cause the 328 to lose wordclock. Enter the 328 Clock Source Select menu to set the 328 back to slave to the S/PDIF input.

When slaving to the Tascam DA-20 output, changing the DAT tape to a tape with a different sample rate from the previous tape will cause the 328 to lose wordclock. Enter the 328 Clock Source Select menu to set the 328 back to slave to the S/PDIF input.

Pro Flag may be set to on or off in the 328 S/PDIF output setup menu.

The DA-20 input should be set to COAX (digital) with the input select switch.



Tascam DA-30 MkII

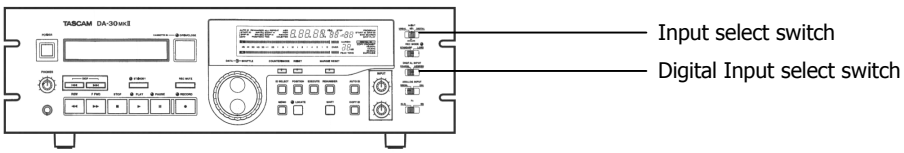
The Tascam DA-30 MkII detects clock frequency from the 328 S/PDIF output sample rate flag setting and not the 328 internal clock frequency (see page 5). Consequently the sample rate flag setting should be set to the same as the 328 internal clock, or if the 328 is slaving to another external source, to the sample rate of that source.

When slaving to the Tascam DA-30 MkII output, a change of sample rate on the DAT tape will cause the 328 to lose wordclock. Enter the 328 Clock Source Select menu to set the 328 back to slave to the S/PDIF input.

When slaving to the Tascam DA-30 MkII output, changing the DAT tape to a tape with a different sample rate from the previous tape will cause the 328 to lose wordclock. Enter the 328 Clock Source Select menu to set the 328 back to slave to the S/PDIF input.

Pro Flag may be set to on or off in the 328 S/PDIF output setup menu.

The DA-30 MkII INPUT switch should be set to DIGITAL and the DIGITAL INPUT switch set to AES/EBU or COAXIAL (S/PDIF) as required.



Panasonic SV-3800

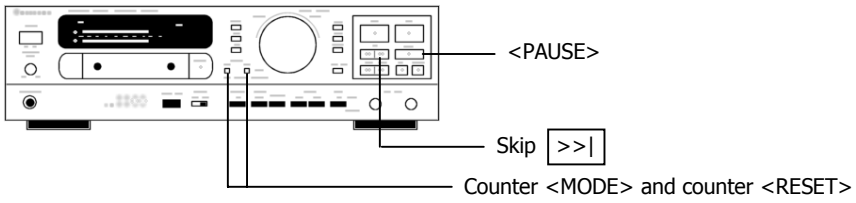
The SV-3800 will auto-detect the sample rate at AES/EBU and S/PDIF inputs from the wordclock imbedded in the 328 outputs, regardless of the sample rate flag setting in the 328 AES/EBU or S/PDIF output setup menus.

Clicks may be heard when the SV-3800 playback sample rate changes and the 328 is set to slave to the SV-3800 AES/EBU or S/PDIF output.

Pro Flag may be set to on or off in the 328 AES/EBU or S/PDIF output setup menus.

Adjusting status bit settings or the 328 sample rate while recording or in record ready mode will result in momentary clicks in the audio stream and a temporary dropout on the SV-3800 input, indicated on the SV-3800 input meters.

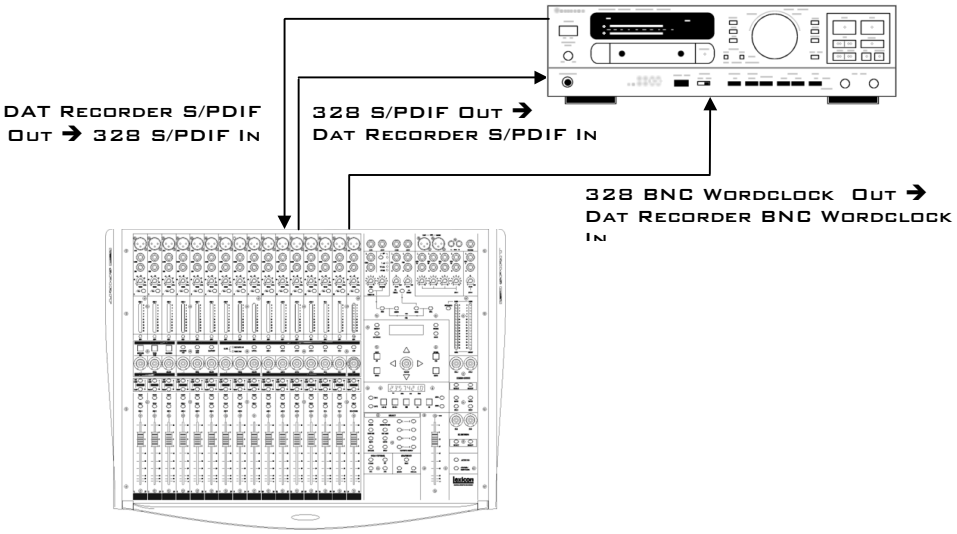
When playing back a DAT from the SV-3800 it is important to note that clock is only present at the selected SV-3800 digital output at any one time. By pressing the counter <MODE>, counter <RESET> and <PAUSE> keys simultaneously and selecting menu 0 with the counter <MODE> switch, the active output can be selected with the skip [>>|] key. This should be set to AES for the AES/EBU output or IEC-C for the coaxial S/PDIF output. This must also be set for the SV-3800 input. Press counter <RESET> to return.



DAT Recorders With BNC Wordclock Input

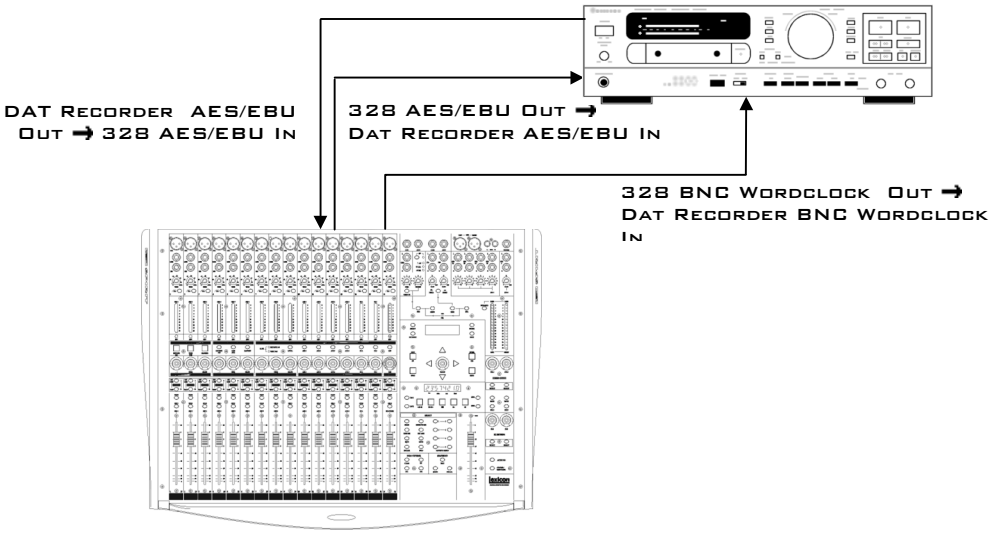
5 Connecting The System

If the DAT recorder is to be connected to the 328 for use with S/PDIF I/O, the system should be configured thus:


DAT Recorder S/PDIF Out → 328 S/PDIF In
328 S/PDIF Out → DAT Recorder S/PDIF In
328 BNC Wordclock Out → DAT Recorder BNC Wordclock In

NOTE	**The digital audio connections and the BNC wordclock connection must both be made**

If the DAT recorder is to be connected to the 328 for use with AES/EBU I/O, the system should be configured thus:


DAT Recorder AES/EBU Out → 328 AES/EBU In
328 AES/EBU Out → DAT Recorder AES/EBU In
328 BNC Wordclock Out → DAT Recorder BNC Wordclock In

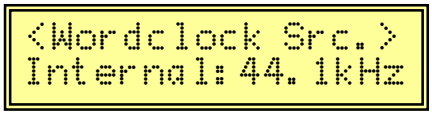
NOTE	**The digital audio connections and the BNC wordclock connection must both be made**

6 Digital 328 Setup

Wordclock

The DAT recorder should be set to slave to the clock present at the BNC wordclock input. The manual supplied with the DAT recorder should be consulted on how this should be done. The same clock source should then be used for both playback and record of the DAT recorder.

To set the sample rate of the Digital 328 internal clock, press **<MENU>** and use the PARAM encoder to scroll down until 'Clock Source Sel' is the highlighted menu. Press **<ENTER>** and set the 328 to run on its internal clock at the sample rate at which you wish to record or playback a DAT.



S/PDIF Input And Output Configuration

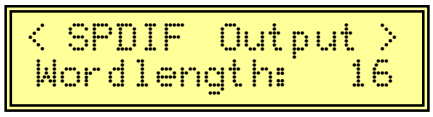
Press **<MENU>**, and use the PARAM encoder to scroll down until 'SPDIF I/P Setup' is the highlighted menu. Press **<ENTER>** and route the S/PDIF input as required, from a choice of stereo inputs 1 and 2, FX returns 1 and 2 or as a dedicated 2 Track input. The SP/DIF input can also be routed to 'NOWHERE', which is the default setting, in which case the signal is muted.

NOTE	**Assigning the S/PDIF input will override any analogue signal present at the selected input. The S/PDIF and AES/EBU inputs cannot be routed to the same input simultaneously.**

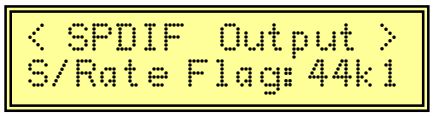
S/PDIF Output:

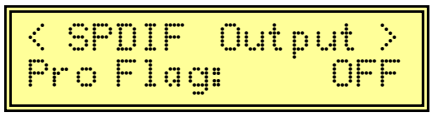
Press **<MENU>**, and use the PARAM encoder to scroll down until 'SPDIF O/P Setup' is the highlighted menu. Press **<ENTER>** and route the S/PDIF output as required, from a choice of the mix bus, aux outputs 1/2 or 3/4, or FX sends 1/2.

To set the wordlength of the S/PDIF output, press the down cursor from the above menu page. The wordlength options are 16, 20 or 24 bit. Note that 16 and 20 bit settings are dithered and 24 bit is undithered.



To set the status bits within the S/PDIF output stream * , press the down cursor. By default the S/PDIF output status bits setting of 'AUTO' sets the sample rate flag to 44.1kHz and the pro flag to off. To set these manually, you should use the PARAM encoder to set the status bits to MAN. Press the down cursor again to set the sample rate flag and again to set the pro flag on or off.



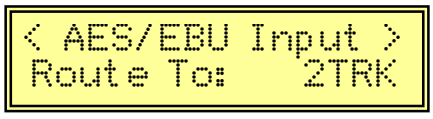


NOTE	*** Individual DAT recorder models may require different settings. Consult the DAT Recorder Setup section of this setup guide and documentation specific to the DAT recorder model.**

AES/EBU Input And Output Configuration

AES/EBU Input:

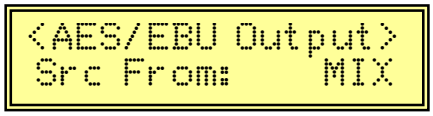
Press **<MENU>**, and use the PARAM encoder to scroll down until 'AES/EBU I/P Set.' is the highlighted menu. Press **<ENTER>** and route the AES/EBU input as required, from a choice of stereo inputs 1 and 2, FX returns 1 and 2 or as a dedicated 2 Track input. The AES/EBU input can also be routed to 'NOWHERE', which is the default setting, in which case the signal is muted.



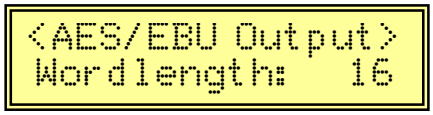
NOTE	**Assigning the S/PDIF input will override any analogue signal present at the selected input. The S/PDIF and AES/EBU inputs cannot be routed to the same input simultaneously.**

AES/EBU Output:

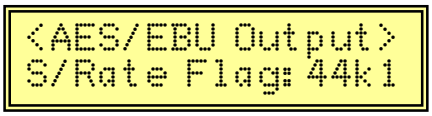
Press **<MENU>**, and use the PARAM encoder to scroll down until 'AES/EBU O/P Set.' is the highlighted menu. Press **<ENTER>** and route the AES/EBU output as required, from a choice of the mix bus, aux outputs 1/2 or 3/4, or FX sends 1/2.

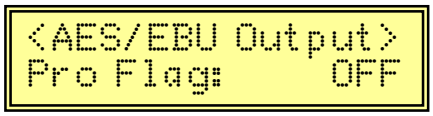


To set the wordlength of the AES/EBU output, press the down cursor from the above menu page. The wordlength options are 16, 20 or 24 bit. Note that 16 and 20 bit settings are dithered and 24 bit is undithered.



To set the status bits within the AES/EBU output stream * , press the down cursor. By default the AES/EBU output status bits setting of 'AUTO' sets the sample rate flag to 48kHz and the pro flag to on. To set these manually, you should use the PARAM encoder to set the status bits to MAN. Press the down cursor again to set the sample rate flag and again to set the pro flag on or off.





NOTE	**Individual DAT recorder models may require different settings. Consult the DAT Recorder Setup section of this setup guide and documentation specific to the DAT recorder model.**

DAT Recorder Setup 7

The DAT recorder will have to be set up to record from the digital AES/EBU or S/PDIF input. Consult your DAT recorder manual for precise details of how this should be done.

The DAT recorder must be set to slave to the clock present at the BNC wordclock input. Consult your DAT recorder manual for precise details of how this should be done.